Typewriters will last longer if erasing is done this way, with the carriage shifted to either side so bits of dirt won't fall in the mechanism and cause wear

First Aid for Typewriters

By R. M. KASTEN

Editor's Note: Mr. Kasten is the plant foreman of the Wholesale Typewriter Company, New York, the largest typewriter rebuilding concern in the world, and has supervised the repairing and reconstruction of hundreds of thousands of machines of all makes.

SO YOUR typewriter creaks and groans, prints letters half clogged up and askew, responds to your touch as if it were lubricated with glue? Don't imagine for a moment it is the fault of the dealer, the manufacturer, or the mechanism! Modern typewriters are constructed to take the worst beating of any precision machine of ranking quality in the world. When a machine acts up, ten to one it is due to your own neglect.

Some typewriter owners don't raise a finger to keep their machines clean. And dirt and dust are factor number one in putting a machine out of business. They not only *slow* down parts, but, acting as abrasives, they also *wear* them down.

You don't leave the back off your watch, but do you cover your typewriter? There is equal need for doing so. You should also regularly wipe off exposed parts with a soft cloth, and brush out the interior with a long-bristled brush, or blow it out with the blower attachment of your vacuum cleaner.

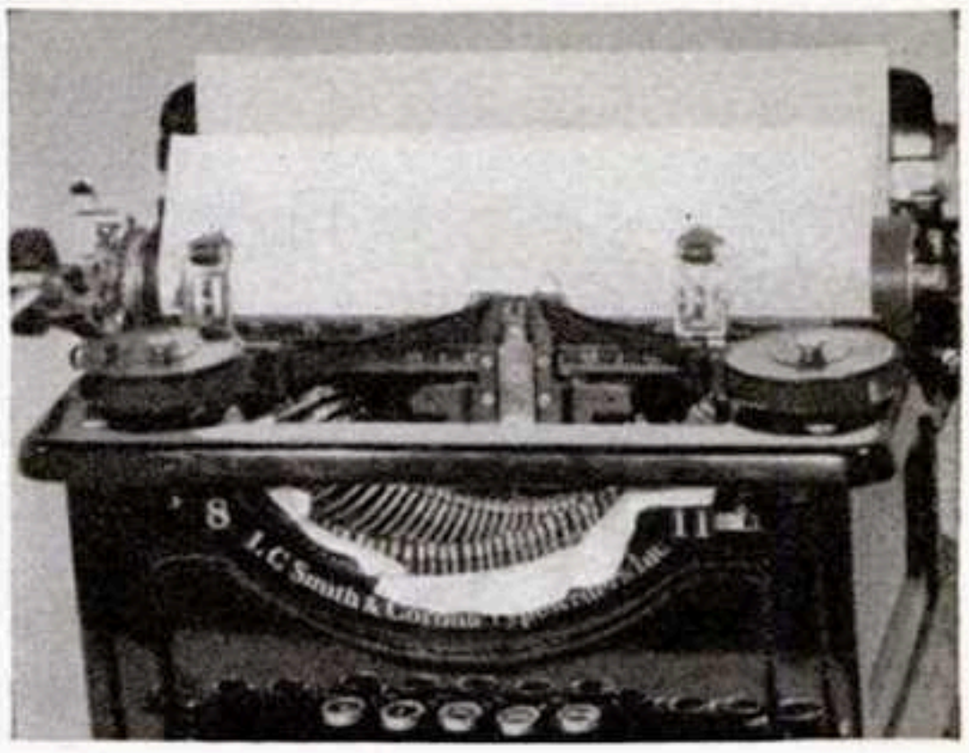
Most operators, by erasing over the type guide, dump particles of dirt straight into the vital mechanism. To avoid this, shift

the carriage all the way to one side, turn the line to be erased to the top of the cylinder, and brush the rubber and paper particles outside the machine where they can do no harm. Also, avoid rolling dust-laden paper into the machine.

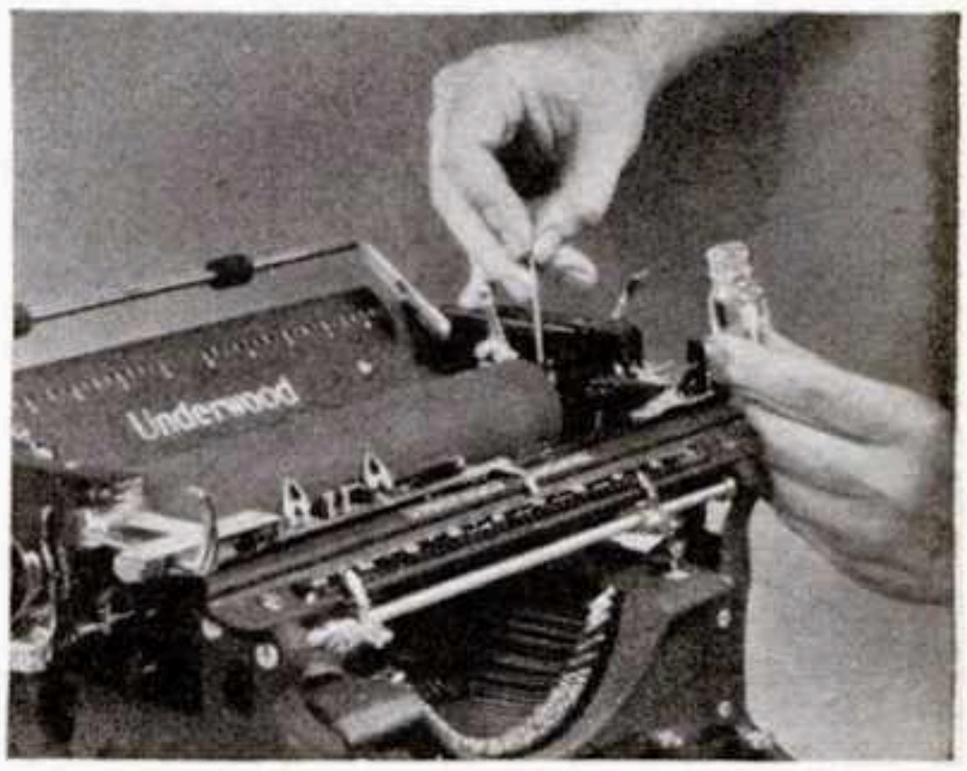
Typewriter type is so easy to clean there is no excuse for clogged letters. Brush them with a dry brush after each day's use and they will stay bright indefinitely. Caked ink may be removed with type putty, alcohol, carbon tetrachloride, or one of the proprietary dry-cleaning fluids, applied with a brush. Press the type putty onto the type, peel it off, and the caked ink comes with it. If you use a liquid, first lift the type and put paper under it to prevent dirt from dripping into the machine. Wipe the type dry with a cloth before using the machine again.

Squeaks, sticking keys, and a carriage so lazy you are sure the mainspring has worn out, may often be cured by a single properly placed drop of oil. Any ordinary light machine oil will do, but regular typewriter or sperm oil is best. Apply it sparingly—as much as will cling to the end of a toothpick will do—and wipe off all excess. Overoiling is as bad as underoiling, because exposed oil soon becomes like sticky fly paper and collects dirt.

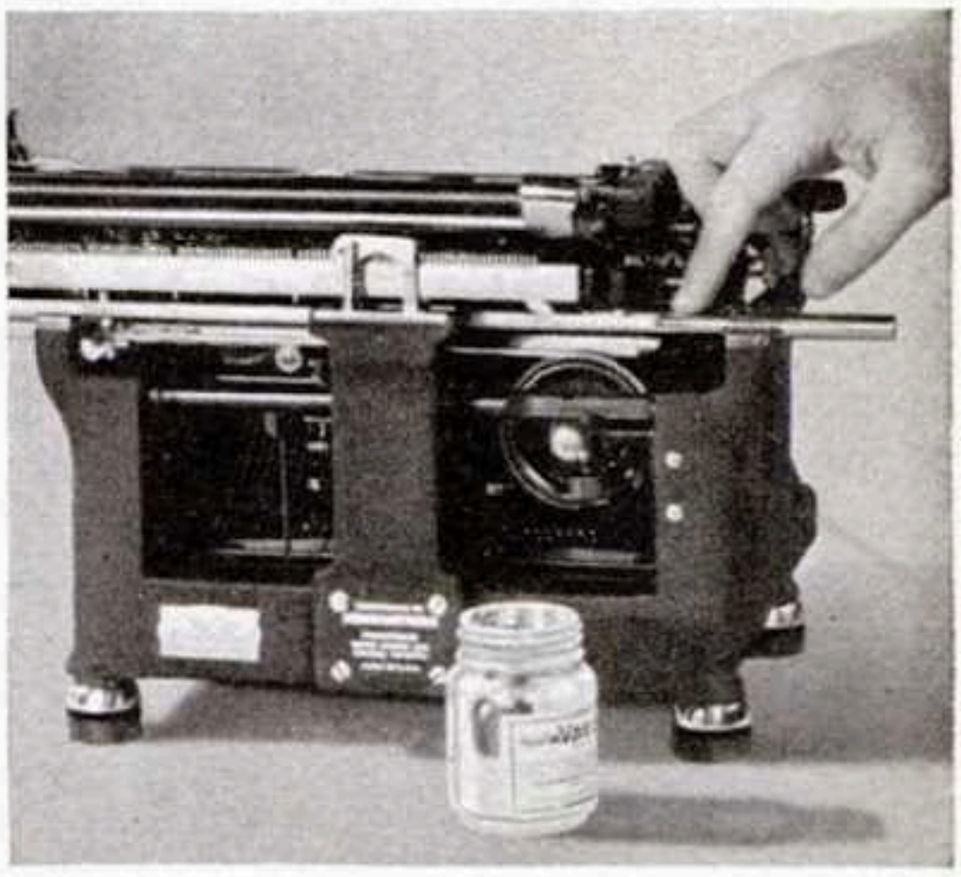
Where should you oil? The bearing at each end of the cylinder, the little roller that engages with the ratchet wheel to lock the lines in position, and all the ribbon-spool shafts and gear shafts connected with them, need oiling. Parts that show a tendency to rust may be



When using type-cleaning fluid, be sure to place paper under type to prevent dirt from falling into the machine. Dry the type with a rag before removing paper. Don't forget . . .



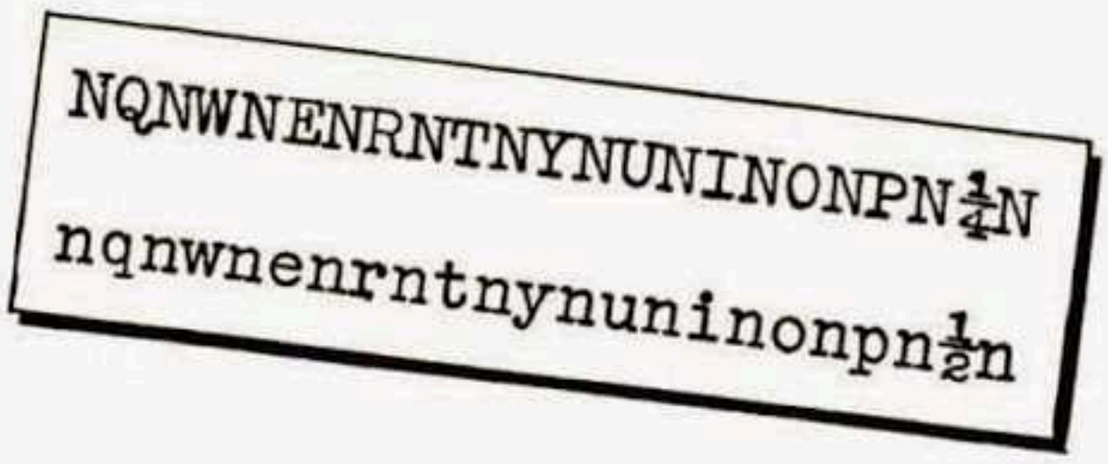
. . . that a little oil in the right places will add to the life of any typewriter. A toothpick is an excellent dropper for applying oil



A typewriter having a "wayrod" needs a dab of petroleum jelly applied to it at times, as above

Yanking paper out as shown at the left puts a shine on the cylinder and causes the paper to slip. Always roll it out

Hold the space bar down and press each key to see if its type bar is centered in the guide



Check the alignment of the type by striking each character between the straight-sided letter "N"

wiped over occasionally with a cloth moistened with oil, but remove all excess with a dry cloth. Squeaks must be tracked down individually, and a drop of oil applied at the source.

If the carriage runs on a steel "wayrod" (as, for example, in all standard Underwood machines), it can maintain its zip only if this rod is kept clean and occasionally lubricated with a little petroleum jelly. Move the carriage far to one side and place a smear of this lubricant on the rod between the carriage bearings. Shift it to the other side and repeat. Then depress the carriage release lever and run the carriage back and forth a few times to distribute the lubricant.

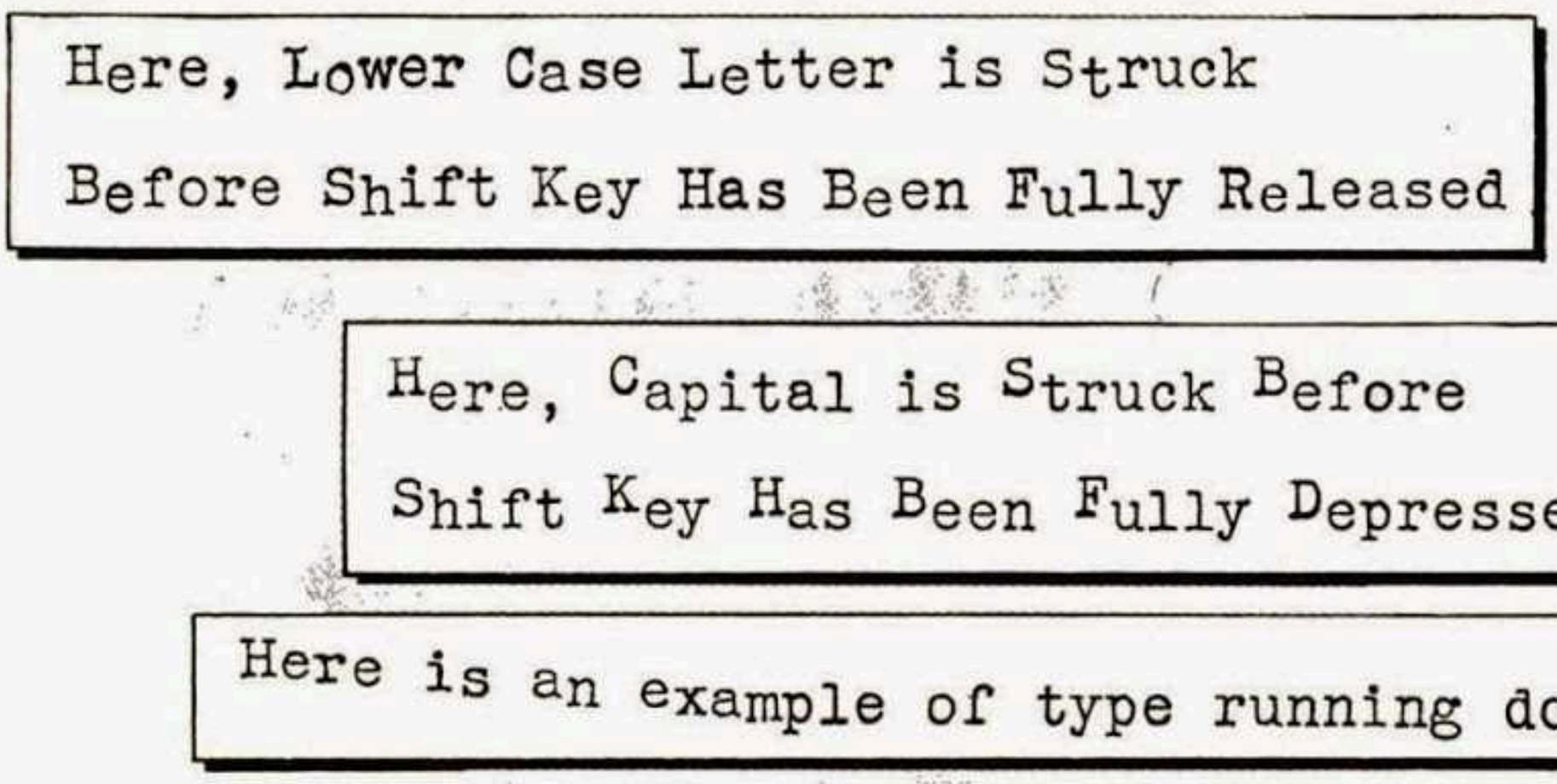
On portable machines, and standard machines in which the carriage runs on ball bearings in a track, this track should *not* be oiled, but should merely be wiped clean.

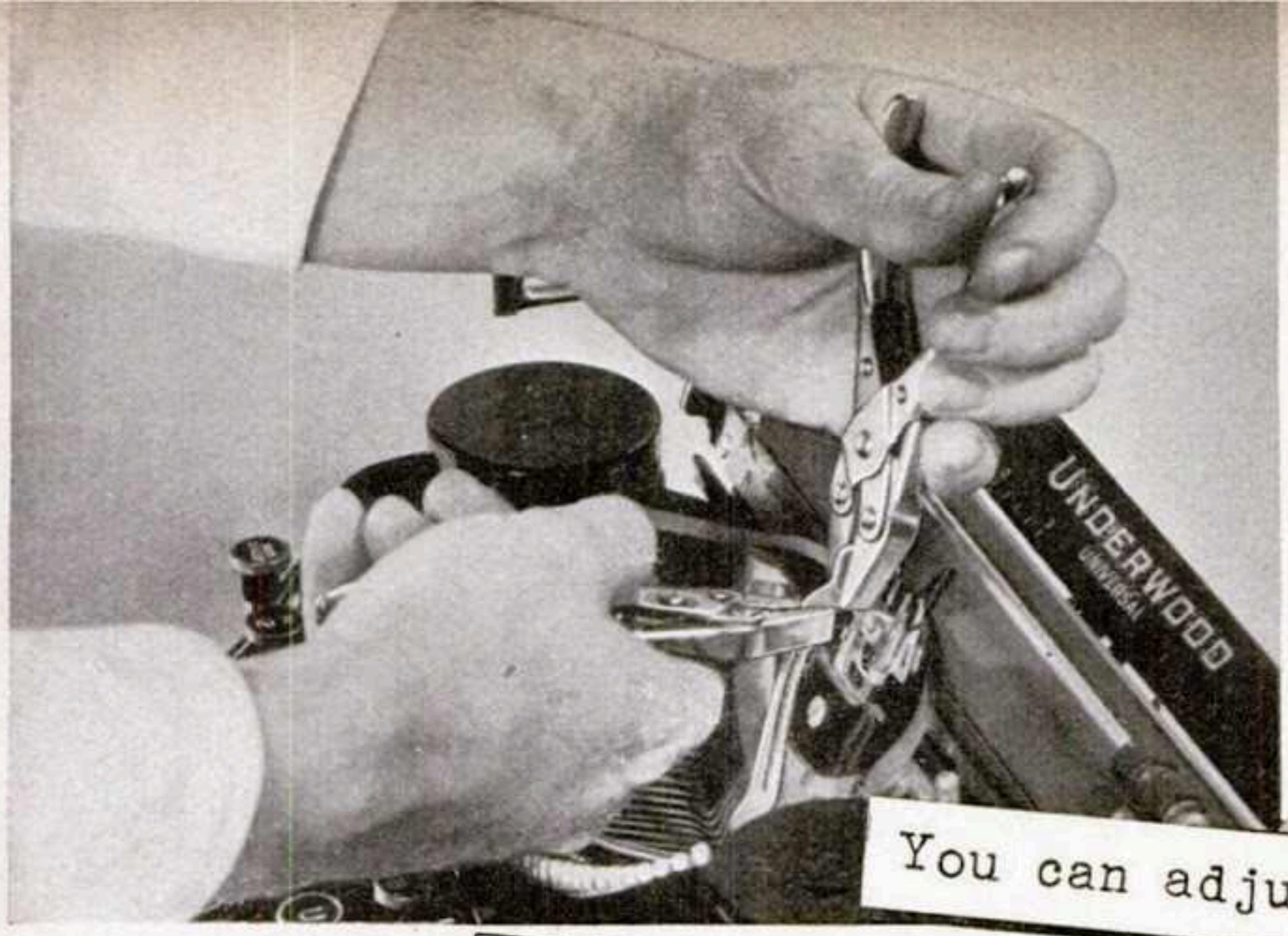
Another part *never* to be oiled is the slotted casting through which the type bars pivot. Oil in these slots would soon gum them up and bog down the whole machine. Shun all rubber parts, also, with your oil can. Oil deteriorates the rubber, and may leave its smear on your paper for months to come.

Have you paper-slipping trouble, from a cylinder worn smooth? Maybe you helped make it that way by a common sin of operation—disengaging the release lever and ripping the paper out with a jerk. This imparts a beautiful shine to the cylinder. If you want the cylinder to last longer, always roll the paper out by the knobs.

Cylinders and feed rollers may be cleaned, and the rubber rejuvenated, by wiping them with denatured alcohol. Just do this when necessary, as too much alcohol counteracts its own good effects. If the feed rollers are worn smooth, a light sandpapering will restore their grip.

Where mechanical adjustments on a typewriter are concerned, a good rule is to leave


Here, Lower Case Letter is Struck
Before Shift Key Has Been Fully Released
Here, Capital is Struck Before
Shift Key Has Been Fully Depressed
Here is an example of type running down hill



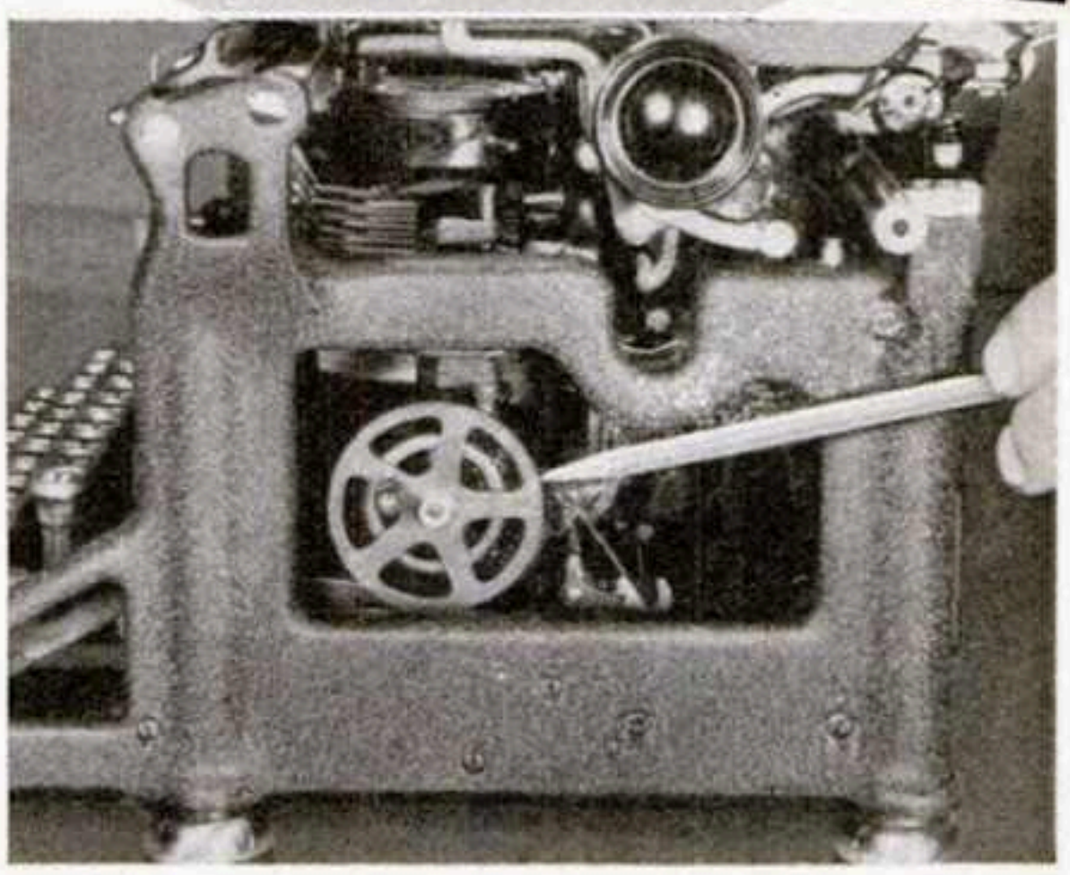
Type that prints heavier on one side than the other, or does not print vertically, can be straightened by the use of two pairs of pliers, one to hold the type bar in place, the other to bend the type. Vertically misaligned type requires special tools for straightening, and the skill of a trained mechanic

them strictly alone, unless you are a typewriter mechanic or have sufficient mechanical ability to understand what you are doing. Most adjustments, once properly set, need never be changed during the life of the machine. Many common troubles, resulting in imperfect printing of type, are caused by avoidable faults in operation rather than by a defective machine. Studying these faults, and correcting them, may improve typing immediately.

Write a few lines for a test. Does the type print high and low? Are the letters spaced evenly? Now make a check on the alignment of the individual letters by carefully striking each character on the keyboard between the straight-sided letter "N." If the letters are still high and low, still spaced unevenly, they need mechanical adjusting. If they are not, the fault lies in an uneven touch or an erratic rhythm in your typing, or both.

Do letters in a line sometimes start nicely, then run downhill? This can't happen if you use the line-spacing lever, instead of rolling the paper through with the cylinder knob. In the latter case, the roller that locks the spacing of the lines may come to rest on top of a ratchet tooth, instead of settling between two of them. When the machine starts, the vibration gradually jars the cylinder around until it reaches its normal position—dropping letters as it turns.

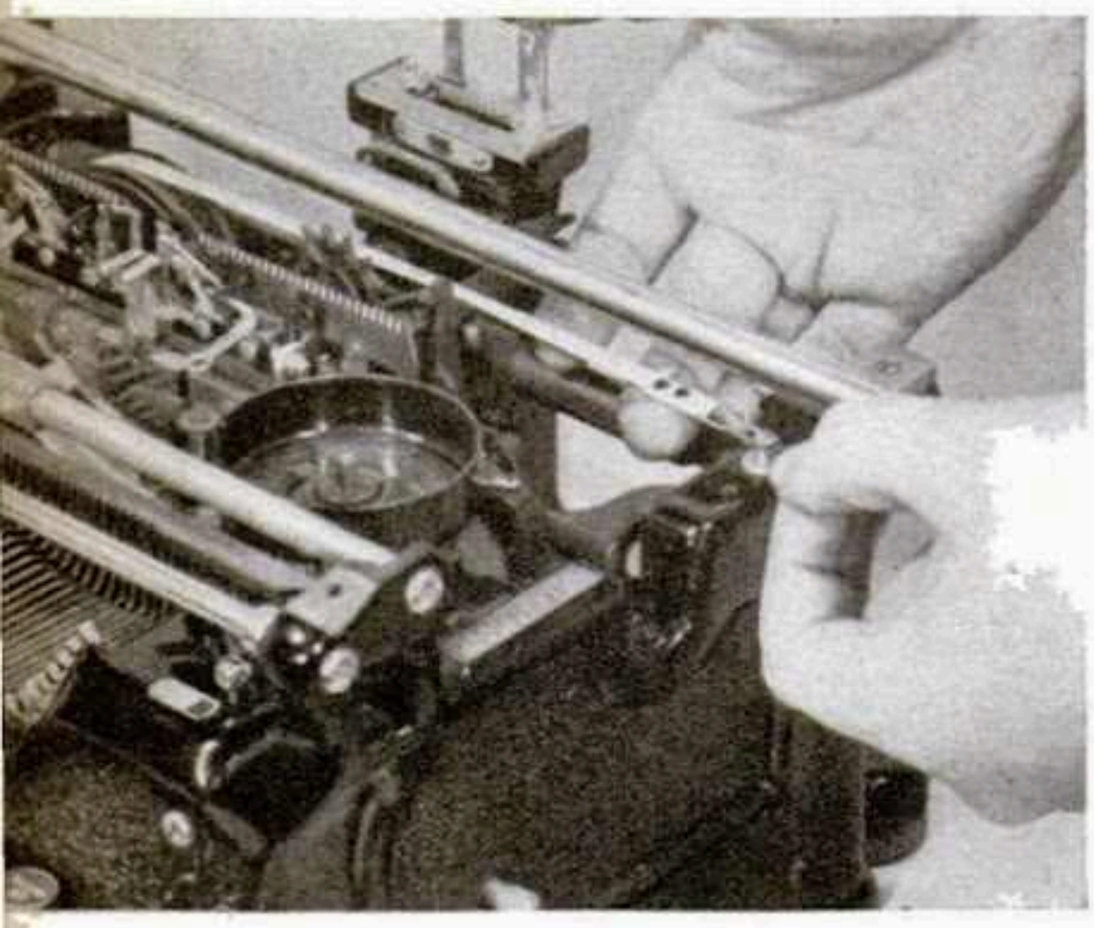
Capital letters higher than the following lower-case (small) letters are a common example of lack of synchronization in typing. The capital is struck before the shift key has been fully depressed. When the succeeding lower-case letter is lower than those which follow it, this lower-case letter has been struck before the shift key was fully released. The remedy in both cases is obvious.



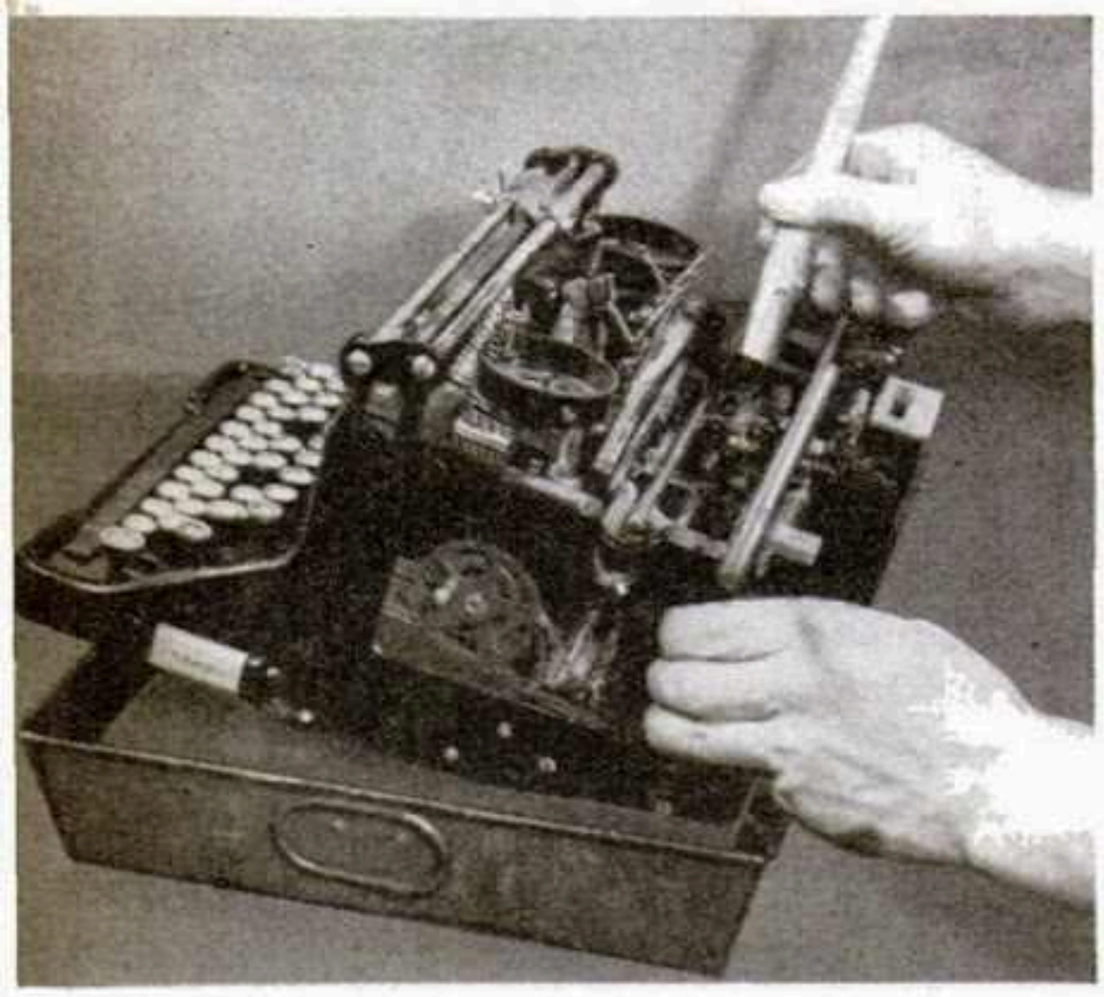
If the ribbon does not move, possibly the pawl on the ribbon-operating ratchet wheel has been bent

When type bars collide heavily, as they sometimes do in irregular typing, one or both bars may be bent sideways and may subsequently stick in the type guide. Or they may rub against the side of the guide and soon wear thin. So, periodically, type should be inspected for correct alignment in the guide. To do this, hold down the spacing bar, and press each key gently and evenly, watching the position of each type as it enters the guide. If a bar does not enter exactly in the center, but rubs on the side of the

Key tension on many standard typewriters may be changed by adjusting spring-tension screws for individual keys. A half turn to the right makes the touch heavier, to the left, lighter



Before giving a machine a bath in gasoline with some machine oil added, remove rubber feet, ribbon, and if possible, the carriage. Above, the carriage has been removed and the draw-band end is being anchored to the frame



Use a large pan to give a machine its bath, and run the liquid through the mechanism with a long-bristled brush. Afterwards carefully wipe the typewriter as dry as possible with a cloth

guide, it should be bent with the fingers until it enters properly.

If type slants sideways in printing, or prints more heavily on one side than the other, any fair mechanic armed with two pairs of pliers can fix it. Hold the type bar, close below the type, with one pair of pliers, and firmly twist or bend the type with the other. Type that prints high or low, or lighter on the top than the bottom, however, presents a job for the service man! Great skill, and tools that exert tremendous pressure, are needed to adjust type in an up-and-down direction.

When the ribbon fails to move, look for the ratchet wheel which should move it and see if a too-brisk cleaning, or an accidental bang, has knocked the little pawl which turns the ratchet out of place. If it does not enter the ratchet teeth enough to turn the wheel each time a key is struck, it should be bent back into position. On machines in which the ribbon mechanism is geared to the carriage movement, this advice would not apply.

Does the key tension of your machine seem too heavy or too light? This tension is carefully adjusted at the factory and should remain in adjustment indefinitely, but sometimes it may be desirable to change it to suit the temperament of an individual operator. In some new machines it may be altered by a simple lever. On most standard machines the action may be adjusted by individual key spring tension screws. To make the action heavier, turn each screw half a turn clockwise. To lighten it, turn each screw counterclockwise.

Unless a typewriter has been so long neglected that its vitals are clogged with dirt and grease beyond the brush-out stage, it need never be given the thorough internal cleaning now to be described —at least until it is ready for complete overhauling or rebuilding. If you have such a machine, however, such a cleaning might bring it back to life.

The cleaning fluid is gasoline mixed with five percent of machine oil, which is added to help retard rust on the cleaned parts. If your knowledge of mechanics makes it possible, remove the carriage to prevent the cleaning mixture from getting on the rubber parts and to allow greater access to the interior. If you can't manage this removal, at least take off the rubber feet of the machine, cover the cylinder with paper, and remove the ribbon.

Stand the typewriter in a pan containing the gasoline—being careful to keep away from all fire—and run the liquid through all the parts with the help of a long-bristled brush. When the cleaning is finished, wipe off all excess liquid, and reoil parts that require special lubrication.

Here again it is necessary to emphasize the importance of applying oil lightly and judiciously. If this is done and the machine is kept clean, it is certain to give much longer and more satisfactory service.